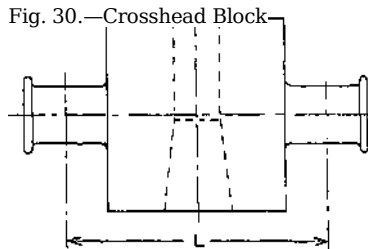of cast iron, of plain square form lined with white metal; the

^s top and bottom without the white metal may be — + I where D in

8

Fig. 30.—Crosshead Block

Diameter of the crank-shaft, the thickness
at the sides being about
™ >at figure.   The cap bolts extend
right down to the bottom of
"Opiate, a recess being formed to
accommodate and to give access
*Uits at the bottom.   The whole depth of
the section of the bed-
^ the centre is thus available to resist the
stresses set up during the
^ke of the engine, which would not be so if studs or T-headed bolts
** the metal at the top near the bearing were used.   The stress
on
^ at the bottom of the thread is on account of their length kept low,
ʳ Hot exceeding 3500 to 4000 Ib. per square inch.   Collar-nuts fitting
⁵ᶜesses in the cap secured by set screws are used at the top end, and
⁵Crew through one of the flats of the nut is used at the bottom end
ᶦˡiing the nuts.   The cap is always made of mild steel, and its thick-
lay be ^ to J in. greater than the
ᐟ^f of the bolts.   A sectional view
ftiain   bearing, such as   described
is shown in fig. 29.
ossheads and   Guides.—Cross-
may be divided into two classes,
ᐟor which the guides are supported
back column only, and those for
the ahead guide is   fixed on the
olumn and the astern guide is fixed
front column, the former type having a single slipper and the latter
ppers.
common type of crosshead takes the form of a cubical forging having
3 gudgeon pins solid with it. The piston-rod is attached to the cross-
i exactly the same way as to the pistons, that is, by a taper part fol-
by a parallel part with a screw thread and nut, the diameters of
these
is being exactly the same as at the piston end of the rod. The
er of the gudgeon pins may be about the same as the diameter of the
rod, or even 25 per cent more, and the length such that the total
from 800 to 1000 Ib. per square inch upon the bearing surface. The
usually comes out about equal to the diameter. These proportions give
security against bending, but the block itself, fig. 30, is subjected to
g stresses through the mid-section at right angles to the paper, the

g moment being — when W Ib. is the load upon the high-pressure
4

and L in. is the distance between the centres of the gudgeon pins,
•s of 6000 Ib. per square inch may be allowed at the outer layers of
jtion, as the load is in alternate directions.
* slippers, usually of cast iron, are attached to the crosshead block
screws or " tap bolts ", four in number, and are about one-fourth of
of the screwed end of the piston-rod. Lips or projections on